

interconnection or resale agreement which provides a subsidy or below cost pricing, therefore providing a disincentive to a new market entrant to invest in its own facilities, is not in the long-term public interest.

- (2) Any situation or agreement that puts the LEC at financial risk for the benefit of a new entrant jeopardizes the long-term rate stability and service levels of existing LEC customers and is therefore not in the public interest.

By adopting these standards, the Commission will emphasize the importance of the suspensions and modifications in enabling the small and mid-size companies to fairly compete against the large national and international telecommunications companies and provide guidance to the states as to what may qualify as adverse economic impact, unduly economically burdensome, technical feasibility and within the public interest, convenience and necessity.

III. PROVISIONS OF SECTION 252

A. Arbitration Process

The NPRM (at ¶¶ 265-267) raises several questions regarding the Commission's role under Section 252(e)(5), which directs the Commission to assume responsibility for any proceeding or matter in which a State commission "fails to act to carry out its responsibility" under Section 252. As an initial matter, USTA notes that there is no inconsistency between this provision and Section 252(e)(4), which provides that if a state commission does not approve or reject a negotiated agreement within 90 days, or an arbitrated agreement within 30 days, of submission the agreement shall be "deemed approved." Section 252(e)(4) plainly applies to a state's failure to act on negotiated or arbitrated agreements, and where an agreement has been reached, Section 252(e)(4) clearly

dictates that it must be allowed to take effect absent timely review by the states. The Act contains no further provision for FCC review of such agreements.

But reviewing agreements is only a subset of the matters with which the states are expected to deal under Section 252. Most importantly, they must also mediate and arbitrate disputes. Here, because no agreement has been reached, there is nothing to go into effect absent state action. Thus, it is here, where a dispute is left in limbo by state-level inaction, that Section 252(e)(5) applies and requires the Commission to step in. But once an agreement has been reached, the Commission may not step in. Otherwise, Section 252(e)(4) would become a dead letter.

The Commission also seeks comment on whether it should develop methods for arbitrating disputes in the event that it must conduct an arbitration under Section 252(e)(5). To the extent that the Commission does so, USTA recommends that the Commission adopt a "final offer" arbitration method as opposed to an open-ended process. As the NPRM acknowledges (at ¶ 268), each party in a "final offer" arbitration has an incentive to submit a proposal that an arbitrator could determine to be fair and equitable, and is more likely to submit terms and conditions that approximate an economically efficient outcome. The process is quick and administratively workable. Open-ended arbitration, by contrast, is likely to be much slower and more difficult to administer, and may

involve the Commission in negotiated areas that are not appropriate for the Commission to examine or decide.⁷²

Finally, USTA urges the Commission to acknowledge the importance of limiting participation in any Section 252 arbitration to the actual parties to the underlying interconnection or unbundling negotiation. The 1996 Act is clear that arbitration is a process that facilitates private party negotiation outcomes; it is not a process that can or should be opened to intervention by non-parties or to public participation.⁷³

B. Section 252(1)

Section 252(i) requires LECs to make available on the same terms and conditions to any telecommunications carrier that requests it any interconnection, service or network element that the LEC provides to any other party pursuant to an agreement or statement approved under Section 252. The Commission has described Section 252(i) as a "primary tool of the 1996 Act for preventing discrimination under section 251." NPRM ¶ 269.

USTA agrees with the Commission's characterization of Section 252(i) as a nondiscrimination provision. But, as with Sections

⁷²Section 252(b)(4)(A) mandates that a state commission limit its consideration of any petition for arbitration to the issues set forth in the petition and any response thereto. This language makes clear that Congress did not intend for the Commission or the states to delve into areas in which the parties have already reached agreement, but instead to confine the arbitration to the precise issues raised by the parties for decision.

⁷³Section 252(h), for example, does not require states to make public any matter pertaining to an arbitration case until such time as an agreement between the parties has been finalized and approved by a State commission.

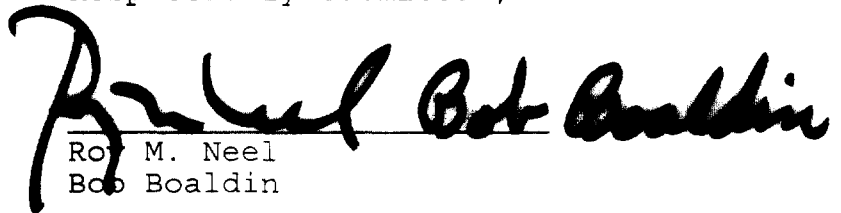
251(c)(2) and 252(d)(1) (which also prohibit LECs from providing interconnection and unbundling on discriminatory terms and conditions), the Commission should not interpret Section 251(i) to prevent differences in terms and conditions that reflect differences in the costs and other circumstances of serving different customers. There is no evidence that Congress intended to displace measures such as density zone pricing or volume and term discounts, for example, that are considered lawful under the general nondiscrimination protection contained in Section 202(a) of the Act. Such measures are economically efficient and therefore benefit consumers.

In addition, the Commission should clarify that Section 252(i) does not permit requesting carriers to pick and choose provisions that they like from negotiated agreements while ignoring ones that they don't like. The agreement is a package that they can accept or reject, as they wish. As the Commission itself acknowledges (NPRM ¶ 271), permitting requesting carriers to pick and choose provisions would skew radically the individualized nature of interconnection and unbundling negotiations, and would greatly magnify the importance of each individual term of an agreement. In order to avoid being whipsawed, LECs would have an incentive to offer only standardized and relatively high-cost packages rather than agreements tailored to the needs of particular competitors.

The intent of the 1996 Act was not to create a buffet table of contract terms for requesting carriers to choose from that is divorced from the context of particular negotiations. Such a

result would defeat the entire Congressional purpose of creating a framework for negotiation in the first instance. Section 252(i) should accordingly be viewed as balancing marketplace dynamics with nondiscrimination principles in much the same way as the Commission's Tariff 12 process that permitted AT&T to provide contract carriage for business services, i.e., Congress created a construct that allows for individually negotiated contracts, but requires that such contracts be made generally available to "similarly situated customers under substantially similar circumstances."⁷⁴

Respectfully submitted,


Roy M. Neel
Bob Boaldin

Mary McDermott
Linda Kent
Charles D. Cosson
Keith Townsend
Its Attorneys

United States Telephone Association
1401 H Street, N.W., Suite 600
Washington, D.C. 20005
(202) 326-7247

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⁷⁴See Report and Order, Competition in the Interexchange Marketplace, 6 FCC Rcd 5880, 5895 (1991), aff'd on recon., 10 FCC Rcd 4562, 4566 (1996).

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of the Local Competition Provisions) CC Docket No. 96-98
in the Telecommunications Act of 1996)

2. The same economic principles should be used in the pricing of interconnection, unbundled network elements, and transport and termination services. Economic efficiency requires that goods and services be produced in the least cost manner. Cost based prices for interconnection, unbundled network elements, and transport and termination will lead both the seller and the buyer of those services to make economically efficient choices. The first principle of an economic approach to interconnection charges is thus that a LEC should be compensated for its costs of providing such interconnection. Undercompensation will provide disincentives for LECs to invest in their networks over time and may make it cheaper for a

competitor inefficiently to use an existing network rather than build its own competing facilities.

3. Numerous regulatory distortions and other economic factors weigh strongly against applying long-run incremental pricing to interconnection and network elements. For a single-product firm in a competitive market free of regulatory distortions, economic theory recommends prices based on long-run incremental cost. LECs, however, are multi-product firms with economies of scale and scope that result in joint and common costs arising from network investment. These costs need to be recovered for a LEC to continue to make efficient investments in its network and to stay in business. TSLRIC (or LRIC) does not permit these costs to be recovered in an economically efficient manner. LECs also have historical costs due to past network investments. Technological change will deprive LECs of recovering costs if rates are always measured on the basis of a forward-looking optimal network model. Yet a policy setting rates on that basis would create incentives for LECs to underinvest. Productive efficiency requires that embedded costs of efficient investment in the network be recovered by the LECs.

4. Until federal and state regulatory distortions, and subsidization of services created to serve regulatory policy objectives, are eliminated, it would be inappropriate regulatory policy and incorrect economics to price interconnection at TSLRIC or LRIC because of the significant regulatory arbitrage which would be created and because a significant source of contribution to fixed and common costs would not be replaced by an alternative source. Even then, no firm will be totally free of joint and common costs; therefore it would not be appropriate for the Commission to mandate pricing at TSLRIC or LRIC. Also, the "reasonable profit" allowed by the 1996 Telecommunications Act (1996 Act) will not be possible if interconnection prices are set at LRIC or TSLRIC.

5. The same principles dictate that reciprocal compensation arrangements for transport and termination must cover the costs of providing those services. Policies that may lead to underrecovery, such as bill and keep, lead to market failure and economic inefficiency.

6. The "avoided-cost" standard for establishing wholesale prices under the Act is economically efficient. Avoided costs should be measured as the additional costs of providing a service at retail assuming the service is already being provided at wholesale. That is to say, the wholesale price should be set at the retail price, less avoided costs, plus costs incurred in wholesaling the service. The efficient discount for wholesale prices is thus net avoided cost.

II. The Pricing of Interconnection, Network Elements, and Transport and Termination

7. For an unregulated, single-product firm, economic theory holds that efficient prices should be based on long-run incremental cost. Interconnection, network elements, and transport and termination are intermediate goods. If the price for an intermediate good (or input of production) exceeds its cost, the user of the intermediate good will tend to shift to a lower-priced, but potentially higher-cost, input. Because economic efficiency requires that the lowest cost input be used, society's resources will be wasted. This loss of productive efficiency is an aspect of the overall loss in economic efficiency that occurs if rates are not set at incremental cost.

8. However, numerous regulatory distortions and other economic factors recommend against applying this incremental-cost rule to interconnection pricing. Most importantly, LECs are multi-product firms with economies of scale and scope that result in joint, common and embedded costs arising from shared

facilities and network investment. These costs need to be recovered for a LEC to continue to invest in its network.

9. Current regulatory policy does not permit these costs to be recovered in an economically efficient manner. Current regulation creates large economic distortions because the prices of many services are not related to underlying costs and demand factors in an economically efficient manner. In addition, different types of service providers, e.g. IXCs, ESPs, wireless, are each subject to different regulatory and pricing rules for interconnection. Market forces alone do not determine the prices or terms and conditions for any of them. State and federal regulation of the different services create additional regulatory distortions that complicate cost recovery. Given such regulatory distortions and subsidies, setting interconnection at long run incremental cost would create significant regulatory arbitrage and would cause a further shortfall in cost recovery by eliminating a critical source of contribution to fixed and common costs that would not be replaced by an alternative source.

A. Contribution to Fixed and Common Costs

10. It is universally recognized among economists that if all prices are set at TSLRIC or LRIC, LEC total costs will not be recovered because of fixed and common costs which arise from network economies of scale and scope.¹ These costs include historical costs of network investment and the costs of shared facilities or inputs that are not captured in the measurement of LRIC or TSLRIC for a particular service. Thus, the LECs still need a contribution source to cover fixed and common network costs. Only rates that reflect total costs will provide proper

¹ Fixed and common costs are typically estimated at about 50% or more of total LEC costs, or revenue requirements.

cost-based signals.²

11. Prices that reflect costs are important not only for demand-side efficiency, but for productive efficiency as well. If prices do not cover the costs of network investment, LECs will have an incentive to underinvest to avoid the risk of again being unable to recover historic costs. Similarly, if LECs do not recover all of their joint and common costs, they have an incentive to use technology with reduced economies of scale and scope but higher per-unit (in case of LRIC) or per-service (in case of TSLRIC) costs, because the latter costs will be more fully captured by prices set at incremental cost. This action may be rational for the firm but it raises social costs and deprives society of productive efficiencies. This principle of productive economic efficiency is universally recognized among economists and the Commission has recognized its importance previously. Cost based prices are necessary so that both the seller and the buyer of a service will make the economically efficient choice.

12. With prices set at appropriate levels to reflect total costs, LECs will have the correct economic incentives to invest in network capacity and upgrades. However, if prices for interconnection, network elements and transport and termination are set too low, CLECs, IXCs, CAPs and CMRS providers would be permitted to free ride off the investment made in existing networks by LECs and by other carriers. This free riding will create perverse incentives for future investment in telecommunications networks. Free riding occurs when one party uses an investment by another party without paying for it. LECs

² Economic analysis demonstrates that one should tax final goods and services, not intermediate goods. Taxation of final goods leads to the economically efficient outcome. However, since the 1996 Act does not consider taxation of final services, interconnection prices can include a mark-up over costs in the rates for different types of interconnection, so as to provide contribution for fixed and common costs.

have invested billions of dollars in their existing networks. If prices do not take account of those economic costs, an incentive will be created for the new CLEC entrant to minimize its cost while taking advantage of the existing networks and not paying for usage. Such market failure will cause future underinvestment in networks because companies will understand that they will not be able to recover their economic costs.

13. Thus, LRIC or TSLRIC may provide a starting point for calculating regulatorily mandated interconnection prices but, because LECs must cover their joint, common and historical costs as well, incremental costs cannot be a ceiling for those rates. No economic basis exists for the Commission to issue a rule restricting interconnection prices to LRIC (or TSLRIC).³ Just as a firm which produces DRAMs marks up its price above LRIC to cover its R&D and fixed and common costs, a LEC must be allowed to mark up its costs. Lacking comprehensive reform of the system of subsidies which now exists in telecommunication, LECs must have the opportunity to earn a sufficient return to their investment to create economic incentives for further investment. Interconnection prices which contain a markup above LRIC give LECs the opportunity to earn this return.

B. The Reasonable Profit Standard of the 1996 Act

14. A further consideration is that interconnection rates set at LRIC, or at TSLRIC, do not include the "reasonable profit" which the 1996 Act permits. Two economic reasons lead to this conclusion. First, telecommunications equipment prices have been decreasing so that LRIC or TSLRIC, which is forward looking, will lead to a lower cost estimate than the actual costs incurred by a

³ In competitive situations LECs may voluntarily lower rates to LRIC to meet competition. LRIC is a valid floor for competitive rates because it allows marginal-cost recovery but not predation.

LEC in building its network.⁴ If LRIC or TSLRIC is used, a reasonable profit will not be earned by the LEC. Instead, an economic loss will be incurred by the LEC because it will not recover the cost of its investment. The NPRM recognizes this problem when it states that "setting the price of discrete services and elements equal to the forward-looking LRIC of each service or element is not likely to recover the historical costs of incumbent LECs' networks." (§ 144) If the Commission, through its regulatory policy, causes LECs to lose money on economically efficient investment, it will discourage future investment and contravene the explicit language of the 1996 Act which states it is designed "to accelerate rapidly private sector deployment of advanced telecommunications and information technologies and services to all Americans."⁵

15. The second reason that the "reasonable profit" requirement would not be satisfied is that some of the costs of the network will be fixed and sunk, even within the forward looking horizon of a LRIC study. These sunk costs will not be counted in the forward looking costs of a LRIC study, but they

⁴ Even if actual historical network investment decisions were always completely efficient at the time they were made, improvements in technology will always guarantee that a totally new, hypothetical, network will have a theoretical lower cost than the actual network in place (or otherwise the older technology could be used in the hypothetical network). Thus, basing cost on the current most efficient technology will impart a downward bias on estimates of actual network costs, causing an economic loss to the LECs which made the historical investment. Thus, the study method proposed by Hatfield and Assoc. (March 1996, submitted on behalf of MCI) which claims that the existing network is "irrelevant" (p. 16) is incorrect as a matter of economics and would lead to a downward biased estimate of LEC costs. In a competitive market situation, a potential entrant could choose a new technology, but if the potential entrant decides not to enter, the hypothetical costs do not enter the pricing decisions. Thus, MCI can decide to invest in a network, but otherwise, the actual costs should be used to set prices, not hypothetical costs.

⁵ Economic theory has focussed recently on the problem of "time consistency" in government policy. If the government (or regulators) confiscate private investment through taxation (or low mandated rates), the market will build this risk into higher discount rates which will lead to decreased future investment. Causing an economic loss on efficient investment through regulatory policy is a form of confiscation by the FCC.

are again investments incurred by the LEC in building its network. Failure to account for these sunk costs will again lead to the outcome that the LEC will not earn a "reasonable profit", but instead will face an economic loss and face inefficient investment incentives.

16. The NPRM's proposal that a transitional pricing mechanism could be set at short-run marginal costs (§ 132) directly contravenes sound economic principles. Short-run marginal costs do not account for the cost of capital at all. Thus, short-run marginal costs would not cover the joint, common, and historical costs of providing the service, let alone yield a "reasonable profit". The use of a marginal cost standard would be equivalent to a forced monetary transfer from the LECs to their competitors. Such a transfer would reduce economic efficiency and is inconsistent with the obligation of regulators to allow a regulated company the opportunity to cover its costs, including a return on capital invested.⁶

C. The Use of Proxy Variables to Set Rates

17. Measurement of costs, no matter how defined, is in my experience labor intensive, time consuming, and contentious. The NPRM raises the possibility of using proxy variables to set rates (§ 134). The idea provides significant potential benefits because transaction costs are likely to be much lower if the Commission provides a safe harbor that both parties know is

⁶ To an economist, profits are measured as revenues minus costs. Costs include wages, material, and the cost of capital. To achieve the "reasonable profit" allowed by the 1996 Act, a markup above LRIC is required to help cover the fixed and common costs of the network which are not included in LRIC or TSLRIC. Indeed, regulation of LECs has often considered profit, also often called contribution, as the difference between revenue and embedded cost. Thus, the "reasonable profit" criterion of the 1996 Act is consistent with past regulation of LECs, because without profit to pay for the joint and common costs, LECs would go out of business because the total revenues would be below their total costs on a company-wide basis.

acceptable.⁷ Assuming that IXC's are barred from arbitraging around current access rates, current interstate access rates net of CCLC and RIC, as proposed in the NPRM (§ 139), provide a reasonable proxy variable for use of the local loop by true local entrants. Since the CCLC is a non-traffic-sensitive charge, the remainder after subtracting CCLC and RIC from access charges would provide a proxy variable for usage-sensitive charges such as the charge for transport and termination under a reciprocal compensation arrangement.

18. Lastly, with regard to unbundled elements specifically, the "technically feasible" standard of the 1996 Act should be subject to a market-test rule. The unbundled element should only be required to be provided when there is actual market demand for its use. (NPRM § 74-81) If LECs are required to provide all unbundled elements initially, and no market demand arises for some of the unbundled elements, the cost of unbundling those elements will have created economic waste and a loss of economic efficiency. Thus, a market test provides the correct standard for the LECs' obligation to provide a given unbundled element.

D. A Bill and Keep Policy Leads to Market Failure and Economic Inefficiency

19. Bill and Keep destroys the correct economic incentives because it makes interconnection "free", i.e. zero price, to the CLEC provider. Thus, the CLEC has no economic incentive to use the least cost, most economically efficient, alternative for transport and termination and the LEC has no incentive to make efficient production or investment decisions. The CLEC provider will choose the least cost alternative to itself, but this alternative may create large costs for the interconnecting LEC

⁷ The use of the HHI standards in the DOJ and FTC Horizontal Merger Guidelines (April 1992) to provide a safe harbor for prospective mergers provides an important cost saving for parties considering a merger or acquisition.

and for society.⁸ Only if cost based prices are used for interconnection instead of free interconnection does a CLEC have an economic incentive to consider the LEC's costs through the price signal it receives. Even if traffic is in balance, cost structures of networks vary and different marketing and investment decisions would cause traffic to fall out of balance over time. Bill and keep will waste social resources, which is among the worst possible outcomes of government policy.

20. Bill and keep cannot be justified on grounds that the costs involved are small or that billing costs exceed the revenues involved. The costs at stake are not small in the aggregate, and whether to bill or not should be left to the LECs, which will make the correct, market-driven decision for themselves. The Commission is also incorrect that bill and keep will only cause "a small loss in economic efficiency if the demand for calls is inelastic with respect to termination charges." (§ 241-242). This argument wrongly considers only allocative economic efficiency. However, the other type of economic efficiency, which is typically more important, is productive economic efficiency. Because bill and keep does not create incentives for CLECs to choose cost-minimizing actions regarding interconnection, it leads to productive inefficiency. Productive efficiency losses are typically large. Thus, the NPRM wrongly looks only at demand-side efficiency and misses the more important supply-side factor of productive efficiency.

⁸ Professor Brock makes an error in his economic reasoning when he claims that an advantage of Bill and Keep is that each company has an incentive to reduce its costs. (G. Brock, "Interconnection and Mutual Compensation with Partial Competition", undated, p. 13) He forgets to take account of the additional cost that the sender of traffic imposes on the receiver of the traffic by its cost minimizing policy. This additional cost creates the externality which leads to the market failure and the loss in economic efficiency. Thus, Professor Brock fails to account for the externality aspect of networks which is an essential feature of networks as economists have long realized.

III. The Relationship Between Wholesale and Retail Prices

21. The 1996 Act in Section 252(d)(3) uses an avoided-cost standard to establish the difference between wholesale rates and retail rates. The avoided cost standard is the correct economic standard because it corresponds to the economic concept of cost causation. Thus, avoided costs should be measured as the additional costs of providing the retail service given that the wholesale service is already being provided.

A. The Avoided Cost Standard Leads to Productive Efficiency

22. The avoided costs standard ensures productive economic efficiency. If the difference between wholesale and retail costs were set at an amount greater than avoided costs, a less efficient competitor than the LEC could compete successfully in providing retail services even though its costs were higher than the LEC. The result would be a decrease in economic efficiency because inefficient providers would enter the market and waste society's resources. On the other hand, if the difference between wholesale and retail costs were set at an amount less than avoided costs, a more efficient competitor than the LEC might not be able to compete successfully, even though its costs to provide the retail component of the service were lower than the LEC. Again, the result would be a decrease in productive efficiency and a waste of resources. Thus, the avoided cost standard provides the correct economic relationship between wholesale and retail prices.

23. To ensure the productive economic efficiency discussed above, the correct measurement methodology is net avoided cost.⁹ Thus, if additional costs are incurred to offer a service at

⁹ Overhead is not an avoided cost because a firm continues to incur overhead expenses when its output changes, by definition. Thus, any allocation of overhead would be inconsistent with the avoided cost standard of the 1996 Act. (NPRM ¶ 180)

wholesale, those additional costs should be subtracted from the measure of avoided costs; i.e., the additional costs should be added to the retail rate before the LEC's avoided costs are subtracted from it.¹⁰ If net avoided costs were not used, and the additional costs were ignored, a less efficient competitor than the LEC could compete successfully in providing retail services even though its costs were higher than the LEC's. The result would be a decrease in productive economic efficiency and a waste of society's resources because the new competitor would not be bearing all the economic costs it was causing. The result would be an externality against the LEC, which would have to bear the additional costs. The externality would cause a market failure that would reduce competition and cause higher prices to consumers.

24. Some LEC services are currently priced below LRIC because of regulation. (NPRM ¶ 185-186) In this situation wholesale rates set below retail rates will cause economic inefficiency. Where retail price is cost-based, the net-avoided-cost rule will result in a wholesale price that properly reflects the LEC's relative cost of providing the service, and the competitor will receive the proper price signal to make an efficient choice between producing a service itself or reselling one that it buys at wholesale. If, however, the retail price of the service is below cost because of regulation, the wholesale price no longer conveys the proper signal and competitors will have an incentive to buy at wholesale even when they are more efficient producers of the service than the LECs are.

¹⁰ This equivalency follows easily from the definitions. Let R be the retail price and A be the LEC avoided costs. The wholesale rate $W1 = R - A$. Let the additional costs be denoted as D . Now the correct wholesale rate would be $W2 = R - (A - D) = (R + D) - A$. Similar equivalencies arise in determining imputation rules for LECs. See J. Hausman and T. Tardiff, "Efficient Local Exchange Competition", Antitrust Bulletin, 1995, and J. Hausman, "Proliferation of Networks in Telecommunications", ed. D. Alexander and W. Sichel, Networks, Infrastructure, and the New Task for Regulation (Univ. of Michigan Press, 1995).

25. If the Commission does require wholesale discounting of services with below-cost retail rates, then the shortfall to the LEC should be made up from the universal services fund or some other source. The fund contribution should of course flow to the party absorbing the loss, which is the LEC providing the service at wholesale. Otherwise LECs will fail to recover their costs leading to the skewed investment decisions and productive inefficiencies already discussed.

B. Wholesale Pricing Should Apply Only to Actual Retail Services

26. Suppose a competitor wants to provide a given retail service that is a vertical service with a contribution contained in its price. This contribution goes to pay for part of the fixed and common costs of the network. Using the methodology described in the 1996 Act and discussed above, the wholesale price would be determined by subtracting the LEC's avoided costs in providing the service on a wholesale basis. Alternatively, to provide the same service the competition could seek to buy a basic dialtone line at its below-cost price, then buy unbundled services at cost, and offer the vertical service to the customer without bearing all the costs of producing that service. The competitor will choose the latter option, if it is allowed, because the cost basis will be lower. The basis of this regulatory arbitrage is the below cost pricing of certain services due to regulation. The Commission should not allow such arbitrage to occur and should not give competitors the option to bypass wholesale pricing by reassembling retail services through purchase of unbundled network elements.

27. The above arbitrage problem arises from the system of subsidies currently built into regulated service prices. As competition increases, regulators will be required to eliminate the subsidies and allow competition to proceed on the basis of

relative economic efficiency. In the near term, however, restriction of wholesale pricing to actual retail services and a prohibition on reassembly of such retail services through unbundled elements will need to be enforced. Otherwise competitors will choose to use below-cost services to compete with LECs who are forced to bear the actual economic costs. Such an outcome would lead to massive economic inefficiency.

C. The Wholesale Discount Should Not Apply to Promotions

28. Companies in competitive markets run promotions to gain new customers. Promotions are a normal pro-competitive activity which benefits consumers. However, if a company receives no economic benefit from a promotion, it will not engage in promotions. The NPRM asks whether the wholesale discount should apply to promotions. (§ 175) It should not apply because it will deter LECs from offering promotions and competition will be decreased. This prediction is not hypothetical because the California PUC required a retail margin between wholesale and retail cellular rates that included promotions. California was the only state to require a retail margin. As my academic research and affidavits to the Commission on cellular regulation demonstrated, this retail margin requirement led to higher cellular rates in California, even after controlling for other economic factors. Since the 1996 Act makes competition the key standard of future telecommunications policy, the Commission should not institute regulation which will decrease competition. Promotions are a key factor in competition in most competitive markets. They will serve a similar pro-competitive purpose in LEC retail service markets.

J. A. Hausman 13 May 1996
Jerry A. Hausman

Subscribed and sworn to before me
this 13th day of May, 1996

Paula Gaudin
Notary Public

My Commission Expires My Commission Expires July 3, 1993

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Implementation of the Local Competition)	
Provisions in the Telecommunications Act)	CC Docket No. 96-98
of 1996)	
)	
)	

DECLARATION OF DR. CHARLES L. JACKSON

1. I am a communications engineer with substantial experience in telecommunications technology. I am employed by Strategic Policy Research, doing business at 7500 Old Georgetown Road, Bethesda, Maryland. I received my undergraduate degree in applied mathematics from Harvard College and my Ph.D. degree in electrical engineering from MIT. I have worked for more than a quarter of a century in the electronics and communications industry. My previous employment has included serving in the Common Carrier Bureau of the FCC, as engineering assistant to FCC Commissioner Robinson, and on the staff of the House Commerce Committee. In the last few years, I have conducted or contributed to several studies of local telecommunications technology. A copy of a more complete biography is available on the Internet at <http://www.spri.com/1clj.htm>.

2. I define the terms "loop unbundling" and "sub-loop unbundling." I show that loop unbundling has strong analogies to earlier, successful resale requirements in the long distance industry that enabled firms with limited networks to offer more valuable services and to offer services to a larger number of customers. It appears likely that loop unbundling will benefit competition and the public interest. In contrast, I express my belief that neither the market demand for sub-loop unbundling nor the technical feasibility (properly defined) is proven at this time and that the Commission should proceed carefully with sub-loop unbundling if it wishes to best serve the public

interest. I describe the elements of a loop unbundling policy that I think would serve the public interest at this time. The key elements of that policy recommendation are:

- unbundled loops should be provided today,
- sub-loop elements should be provided, if at all, pursuant to a request and negotiation process (including testing and vendor development), and
- rules must protect safety and the technical integrity of the loop plant.

3. I will use the term “loop unbundling” to refer to the sale of the transmission portion of local telephone service (dial-tone loop) without the associated switching services.

Typically, such an unbundled loop would be provided by a dedicated copper wire pair running from a telephone company central office to a customer premises or over loop carrier facilities. Such unbundled loops are similar to the channel terminations used with voice-grade analog private line services. Unbundled loops are already offered in several jurisdictions. I will use the term “sub-loop unbundling” to refer to the sale of only part of the transmission portion of local telephone service. That part could be access to the feeder cable but not the distribution cable, access to the distribution cable but not the feeder cable, access to other points along the loop or access to only one of the two wires in a loop.

4. Unbundling loops from switching appears to meet important market needs. In particular, it allows a firm that provides its own physical loops in a restricted geographic area (e.g., the central business district) to offer loops to customers in a wider geographical market area. Such an expanded capability may allow new entrants in local communications to better match the services they offer to consumer needs and natural marketing communications patterns such as television and newspaper circulation coverage and to grow their networks by using LEC loops to fill out their service area. There appears to be a strong parallel here with resale in the long distance industry. At the beginning of long distance competition, resale of AT&T's long distance service allowed a firm with a limited network of its own to expand its network to customers and terminating locations that its facilities would otherwise not have reached — at least initially. Because most LECs have the network needed to

provide unbundled loops throughout their service areas, I believe that it is clear that loop unbundling will meet important market needs and will facilitate competition.

5. In contrast, I have at least six concerns with sub-loop unbundling. First, I find it hard to identify market needs met by sub-loop unbundling. Sub-loop unbundling would allow a firm that has installed fiber to a neighborhood to buy distribution connections from the LEC. But, non-LEC firms can access the distribution connection only if LEC distribution plant terminates at a convenient location or if it is feasible to place a fiber terminal at the feeder/distribution connection point. For a firm to exploit the elements of the unbundled sub-loop, its feeder and distribution plant needs must parallel those of the LEC. However, the plant of a typical LEC has grown up over the last century and reflects the historical evolution of the community and the technology. It appears to me to be unlikely that any firm building a local communications network today would parallel the technology embodied in existing LEC plant. For example, it would be unlikely that the new entrant would use the same division between fiber and copper as does the incumbent. Moreover, it is not apparent to me that there are any services that an entrant could offer over sub-loop elements that it could not offer over an unbundled loop. I do not see how failure to provide sub-loop elements would impair a carrier's ability to offer services. Consequently, I believe that the demand for and the public interest benefits of sub-loop unbundling are far less than those of loop unbundling.
6. Second, sub-loop unbundling will create special problems not encountered in loop unbundling because of a lack of standards and interfaces. Voice grade loop transmission is a reasonably well-defined quantity with standard interfaces (such as main distribution frames) at the central office and the network interface devices at the subscriber premises. Sub-loop transmission elements are not as well defined — nor do they have standard interfaces. For example, loops may have combinations of feeder and distribution, which in turn can be fiber or copper, with some digital loop carrier mixed in. All these facilities may be underground, buried, or aerial. Moreover, while much telecommunications plant is relatively new, the age of existing plant spans about

50 years — with a few exceptional elements being even older. The notion that there is a single architecture where, say, fiber feeder meets digital loop carrier with distribution on the other side is false. That is why, in fact, when a loop is unbundled from the switch at the central office it is defined as a transmission path between two points, not any particular type of loop technology.

7. Third, the technical feasibility of sub-loop unbundling is unclear at best because of physical limitations on interconnection with the plant as built. One can see that, in the broadest possible sense, it is technically possible to interconnect to an analog copper loop at any point along its length just as it is possible to split a loop into two separate copper conductors and use these loops to communicate using earth return (that is, an electrical circuit created using a copper wire as one conductor and a connection to the ground as the other conductor). In fact, such split loops were commonly used by the alarm industry 25 or 30 years ago, but that practice was discontinued because it led to harmful interference on other communications circuits. Similarly, interconnection at a sub-loop level could eventually be possible at some locations once interfaces were specified and operations support systems developed. But, physical limitations alone probably preclude such multi-carrier interconnection today. Sub-loop unbundling will require additional enclosures to contain cross-connects and other equipment. Such enclosures are not normally in place today, nor have multi-carrier cross-connects been designed. Space will be a significant concern in almost every location, and I imagine the specter and disruption of digging up streets will cause significant community concern. In short, the physical limitations and the potential disruptions to the public are substantial.
8. Fourth, of course, physical interconnection isn't the entire issue. Network security, network maintenance and support by administrative systems are also vital in any assessment of technical feasibility or public interest need. Loop plant was not designed for interconnection with multiple vendors and protection of service reliability and privacy could be compromised if proper safeguards were not employed. It is not clear how sub-loop elements could be tested or maintained once the element is severed

from testing facilities. Indeed, loop testing today is highly centralized and mechanized. Supporting remote sub-loop pieces no longer attached to the system (as might occur if the hypothetical sub-loop element were distribution plant) would require more than software changes; rather the whole system would require re-examination. Moreover, the extensive equipment assignment, inventory, and record keeping systems LECs have in place today were not designed to account for sub-loop sales to others and overhauling them to account for piece parts would be a complicated and time consuming software development task. Any assessment of the technical feasibility of sub-loop unbundling needs to go beyond just physical interconnection and take into account these issues of testing and administrative systems.

9. Fifth, there are problems of safety and control of other harmful externalities that arise with sub-loop unbundling. For example, while loops normally have overvoltage protection circuitry installed where they enter buildings, such equipment is not normally installed at connections in the outside plant. But, once such outside plant connections cross firm boundaries, it may become appropriate to install additional safety protection.
10. Finally, changes in technology may completely change the sub-loop structure without changing the loop service at all. When a LEC adopts a new loop distribution technology (e.g., fiber carrier, hybrid fiber-coax, wireless loops) the technological options for sub-loop transmission will change, while the fundamental loop service will remain almost unchanged. Requiring a LEC to continue to accommodate the needs of those who have purchased sub-loop elements would be unfair (to the LEC, other competitors, and consumers) unless those who were using the sub-loop elements were to pay all the costs of maintaining the older technology in place.
11. I think that the proper regulatory strategy for loop and sub-loop unbundling, at this time, consists of the following policy elements:
 - unbundle loops, and